



①9 BUNDESREPUBLIK  
DEUTSCHLAND



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G 02 B 13/14  
G 03 F 7/20

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199 22 209. 6 14. 05. 1999

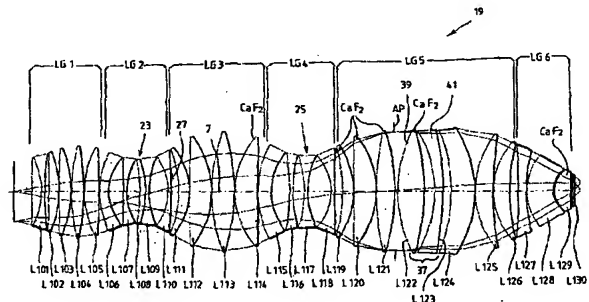
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⑦② Erfinder:  
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Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

⑤④ Projektionsobjektiv

⑤⑦ Projektionsobjektiv mit einer mindestens eine erste  
Taille des Lichtbündels aufweisenden Linsenanordnung,  
wobei eine Linse (L205, L305, L405, L505, L605) mit einer  
asphärischen Oberfläche (29) vor und oder eine Linse  
(L210, L310, L409, L509, L609) mit einer asphärischen  
Oberfläche (27) nach der ersten Taille (23) angeordnet ist.



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	-593.08647	14.7730	He	114.454	
L124	-323.13567	42.1874	SiO2	114.235	
	-229.06128	.7500	He	117.505	5
L125	180.27184	31.4105	SiO2	105.659	
	652.02194	.7500	He	103.698	
L126	143.20049	28.2444	SiO2	91.476	
	383.51531	14.7177	He	88.206	10
L127	-2122.47818	14.1140	SiO2	85.843	
	312.60012	1.3119	He	74.816	
L128	111.92162	46.5147	SiO2	66.708	
	53.69539	2.2604	He	40.084	15
L129	51.14657	27.3776	CAF2	39.074	
	492.53747	3.7815	He	32.621	
	UNENDL	3.0000	SiO2	29.508	
	UNENDL	12.0000		27.848	20
	UNENDL			14.021	

## Asphärische Konstanten

Koeffizienten der asphärischen Oberfläche 21:

EX = 0.0000

C1 =  $0,61839643 \cdot 10^{-8}$

C2 =  $-0,11347761 \cdot 10^{-11}$

C3 =  $0,32783915 \cdot 10^{-16}$

C4 =  $-0,22000186 \cdot 10^{-20}$



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L224	-233.67936	10.0000	SIO2	116.625	
	-538.42627	10.4141		117.109	
L225	-340.26626	21.8583	SIO2	116.879	5
	-224.85666	.7500		117.492	
L226	146.87143	34.5675	SIO2	100.303	
	436.70958	.7500		97.643	
L227	135.52861	29.8244	SIO2	86.066	10
	284.57463	18.9234		79.427	
L228	-7197.04545	11.8089	SIO2	72.964	
	268.01973	.7500		63.351	
L229	100.56453	27.8623	SIO2	56.628	15
	43.02551	2.0994		36.612	
L230	42.30652	30.9541	SIO2	36.023	
	262.65551	1.9528		28.009	
	UNENDL	12.0000		27.482	20
	UNENDL			13.602	

## Asphärische Konstanten

Koeffizienten der asphärischen Oberfläche 29:	25
EX = -0,17337407 · 10 <sup>3</sup>	
C1 = 0,15292522 · 10 <sup>-7</sup>	
C2 = 0,18756271 · 10 <sup>-11</sup>	
C3 = -0,40702661 · 10 <sup>-16</sup>	
C4 = 0,26176919 · 10 <sup>-19</sup>	30
C5 = -0,36300252 · 10 <sup>-23</sup>	
C6 = 0,42405765 · 10 <sup>-27</sup>	
Koeffizienten der asphärischen Oberfläche 27:	
EX = -0,36949981 · 10 <sup>1</sup>	
C1 = 0,20355563 · 10 <sup>-7</sup>	35
C2 = -0,22884234 · 10 <sup>-11</sup>	
C3 = -0,23852614 · 10 <sup>-16</sup>	
C4 = -0,19091022 · 10 <sup>-19</sup>	
C5 = 0,27737562 · 10 <sup>-23</sup>	40
C6 = -0,29709625 · 10 <sup>-27</sup>	







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L424	-242.66564	7.0000	SiO2	124.960	
	-891.19390	9.7905		125.057	
L425	-492.17516	41.0678	SiO2	124.887	
	-242.55195	.7000		125.845	5
L426	145.04614	37.2406	SiO2	104.033	
	406.88892	.7008		101.079	
L427	119.31280	31.5532	SiO2	85.742	
	249.69473	15.2917		79.561	10
L428	1411.93157	7.8700	SiO2	74.994	
	281.90273	.7011		66.830	
L429	143.95136	55.0835	SiO2	61.517	
	404.13980	15.0000		32.177	15
	UNENDL	.0001		13.603	
	UNENDL			13.603	

## Asphärische Konstanten

Koeffizienten der asphärischen Oberfläche 27:

EX = 0,45321787 · 10 <sup>2</sup>	
C1 = 0,12027601 · 10 <sup>-7</sup>	
C2 = -0,16206398 · 10 <sup>-11</sup>	25
C3 = -0,41686011 · 10 <sup>-15</sup>	
C4 = 0,38440137 · 10 <sup>-19</sup>	
C5 = -0,15095918 · 10 <sup>-23</sup>	
C6 = -0,84812561 · 10 <sup>-28</sup>	30

Koeffizienten der asphärischen Oberfläche 29:

EX = 0	
C1 = -0,97452539 · 10 <sup>-7</sup>	
C2 = 0,32591079 · 10 <sup>-11</sup>	
C3 = 0,97426255 · 10 <sup>-16</sup>	35
C4 = -0,846124 · 10 <sup>-20</sup>	
C5 = -0,12332031 · 10 <sup>-23</sup>	
C6 = 0,14443713 · 10 <sup>-27</sup>	

Koeffizienten der asphärischen Oberfläche 33:

EX = 0	
C1 = 0,53144137 · 10 <sup>-8</sup>	
C2 = 0,21837618 · 10 <sup>-12</sup>	
C3 = 0,22801998 · 10 <sup>-18</sup>	
C4 = -0,87807963 · 10 <sup>-21</sup>	
C5 = 0,42592446 · 10 <sup>-25</sup>	45
C6 = -0,85709164 · 10 <sup>-30</sup>	











FIG. 1

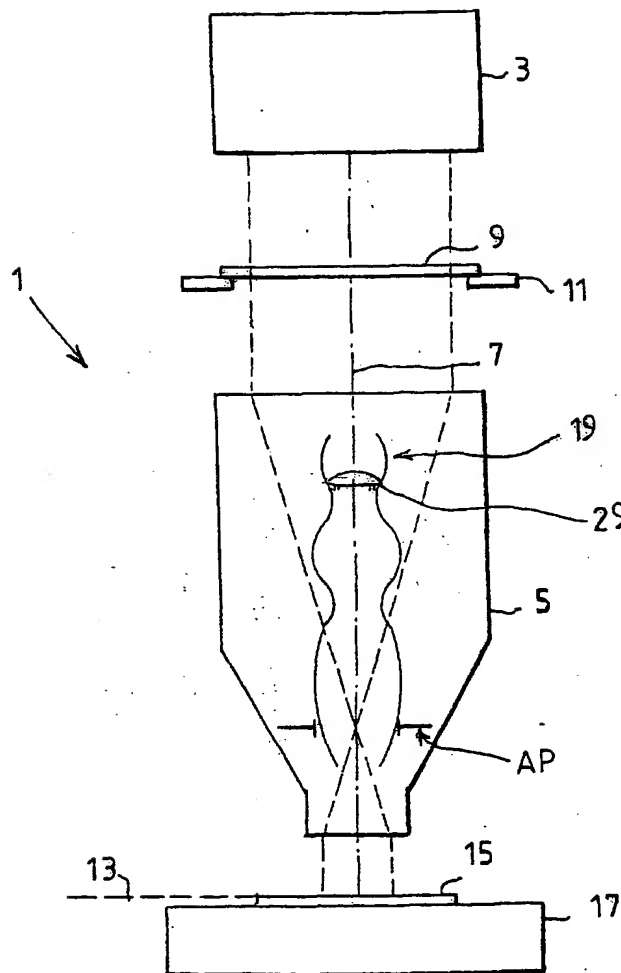


FIG. 2

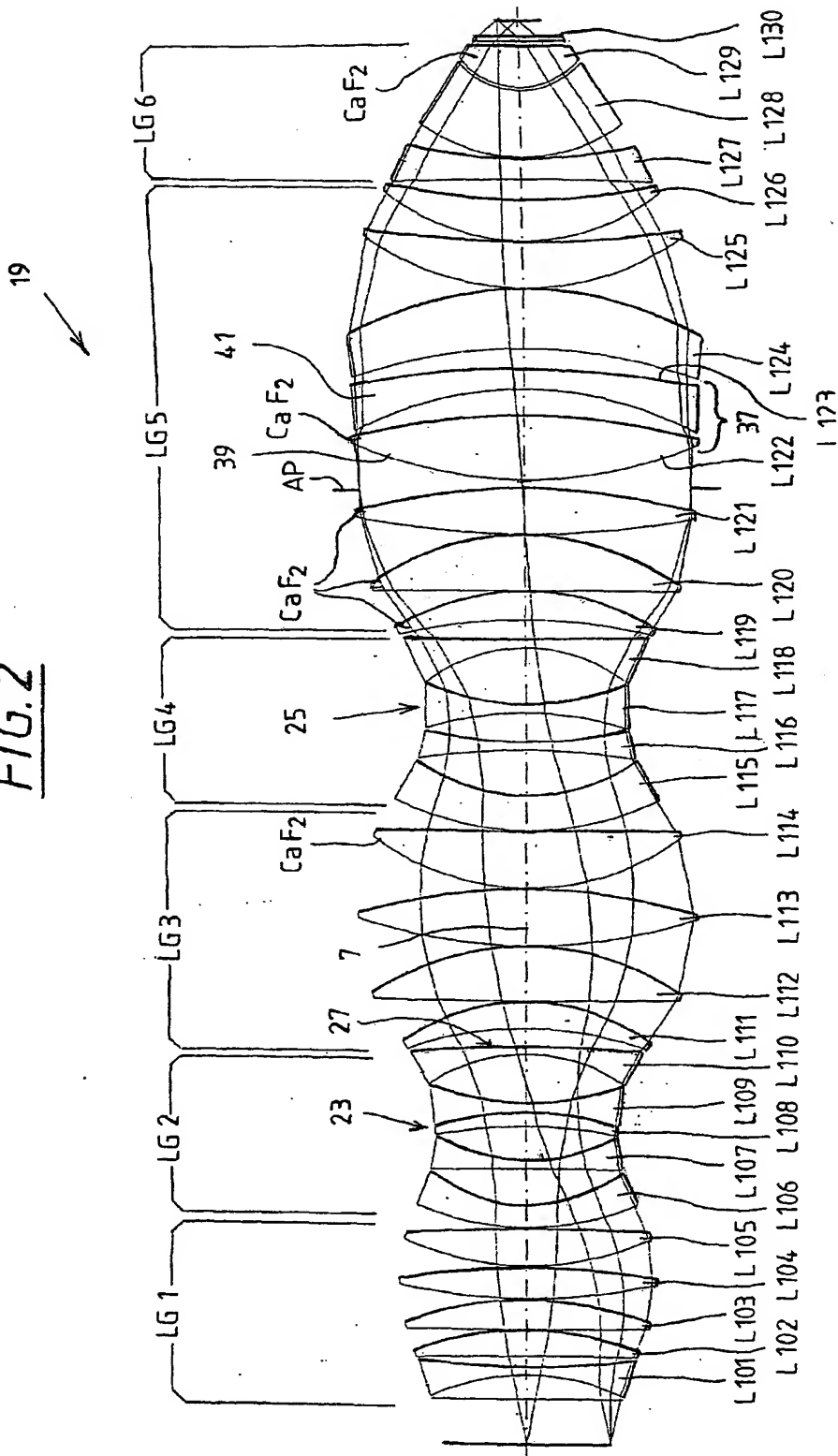


FIG. 3

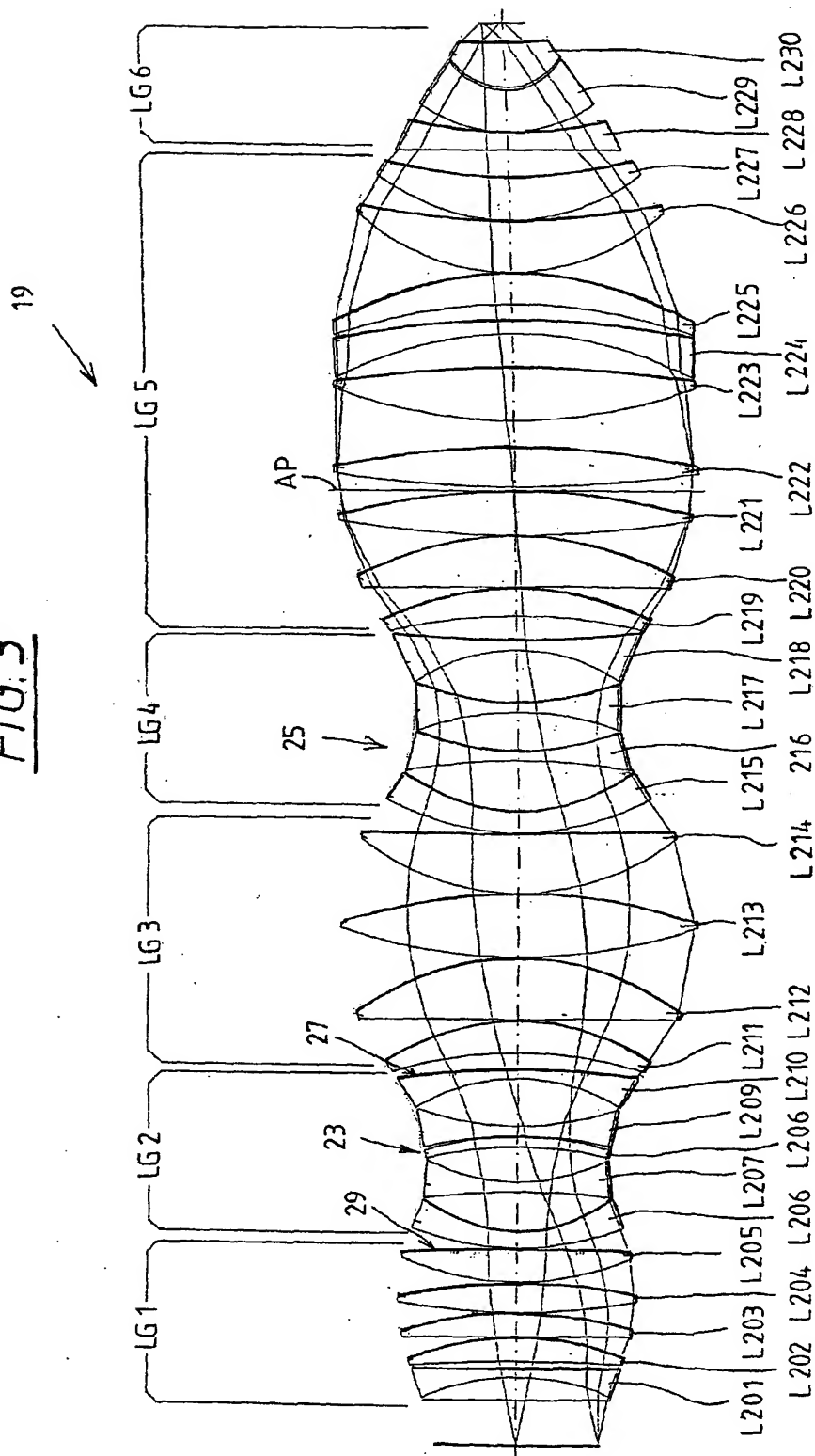


FIG. 4

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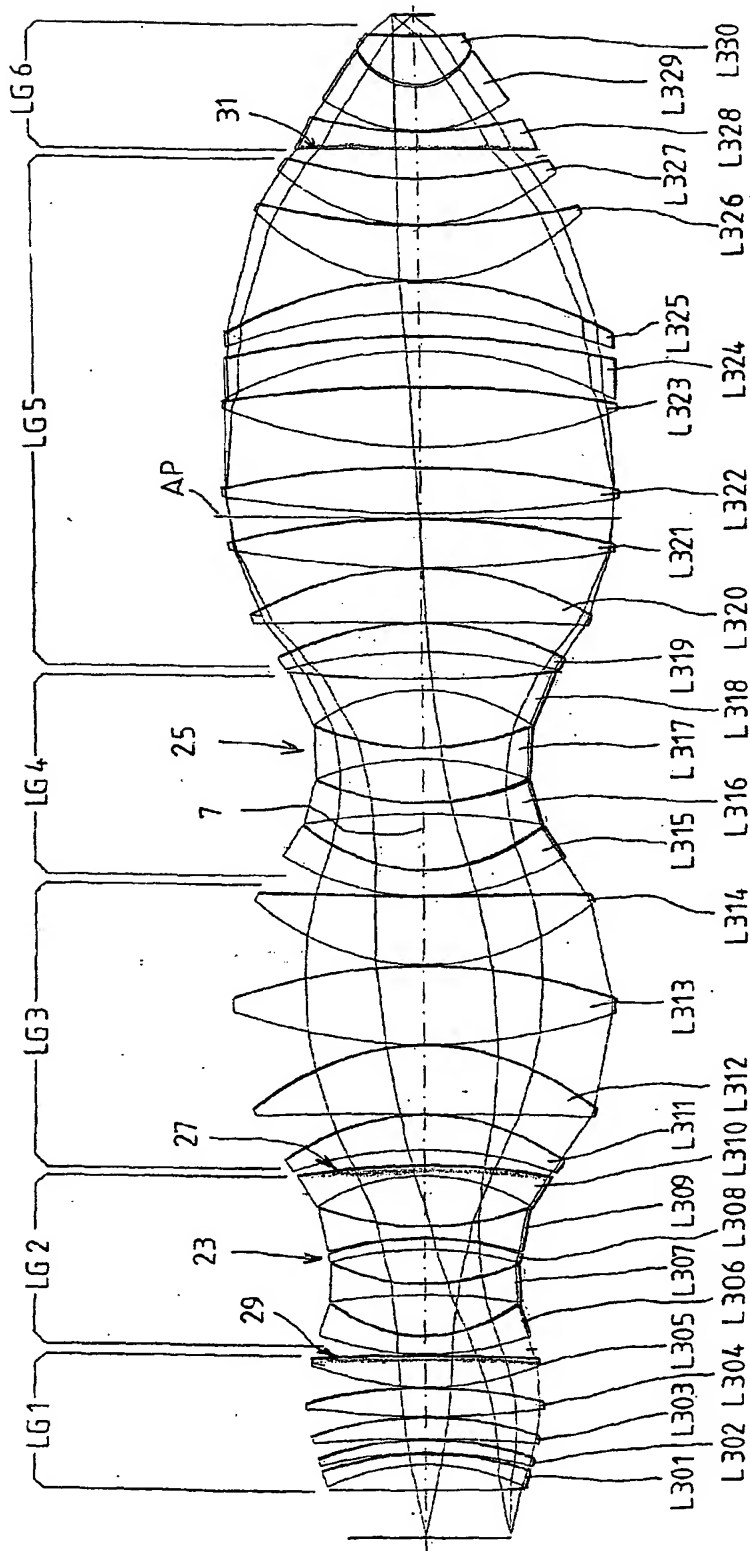


FIG. 5a

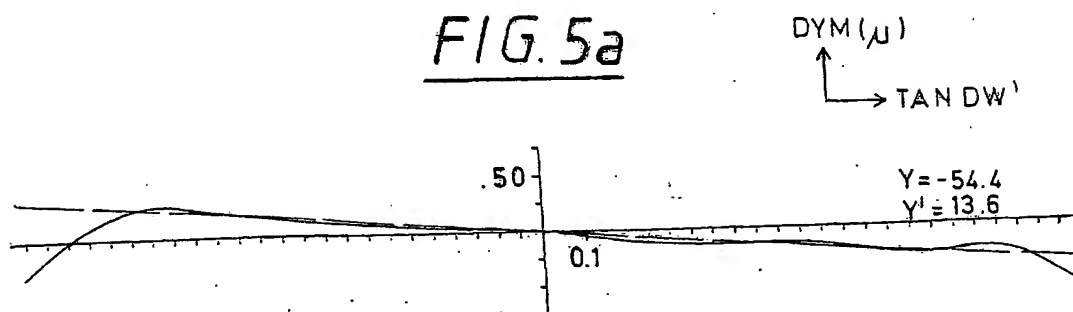


FIG. 5b

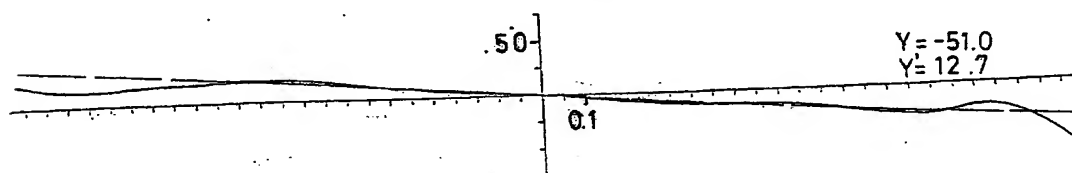


FIG. 5c

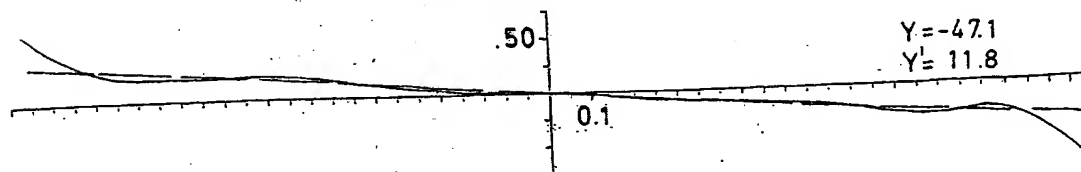


FIG. 5d

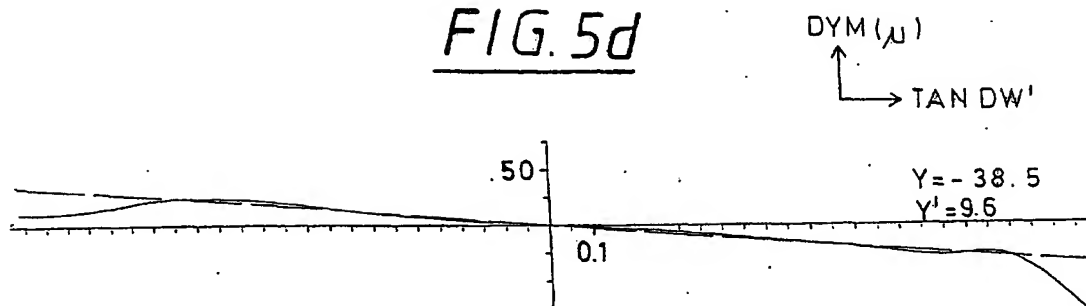


FIG. 5e

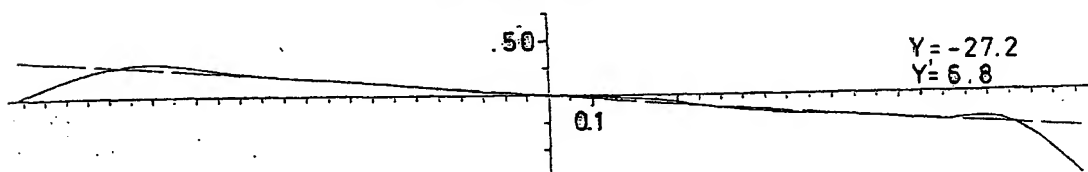


FIG. 5f

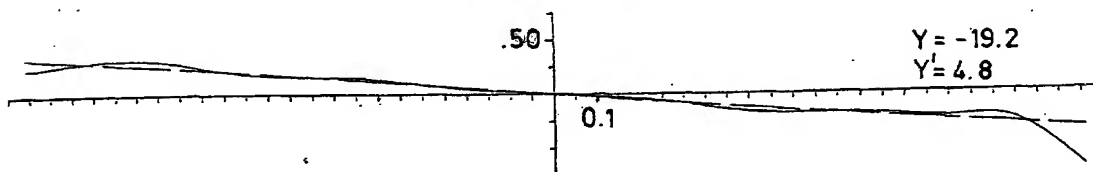
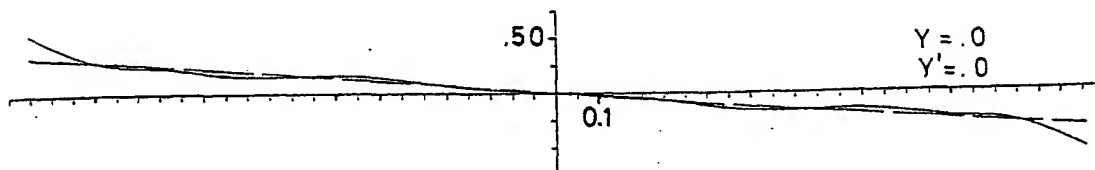


FIG. 5g



DZS ( $\mu$ )  
 $\uparrow$   
 $\rightarrow$  TAN DW'

FIG. 6a

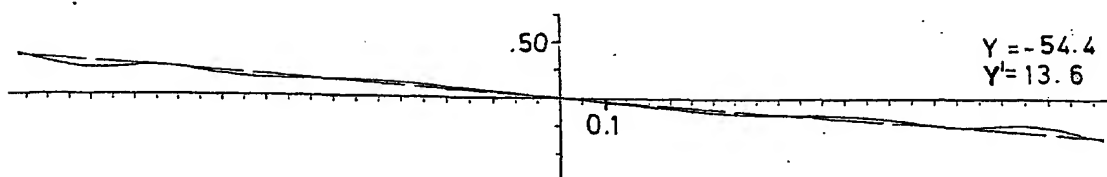


FIG. 6b

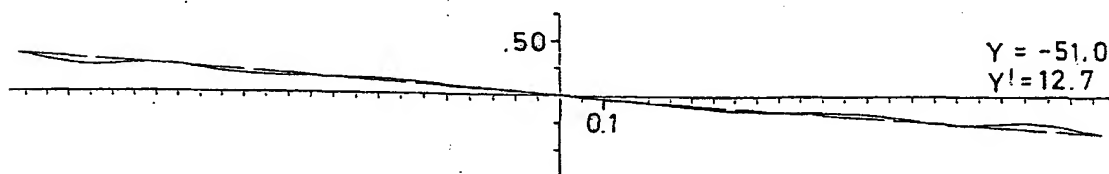
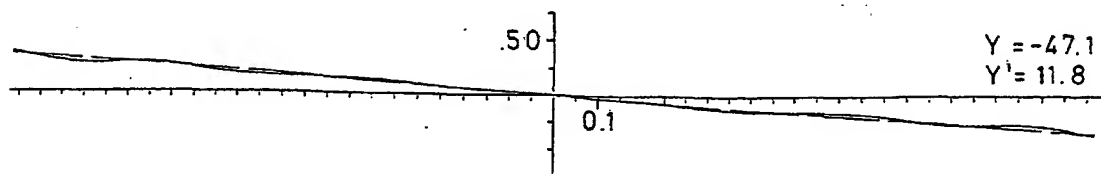


FIG. 6c



DZS ( $\mu$ )  
 $\uparrow$   
 $\rightarrow$  TAN DW'

FIG. 6d

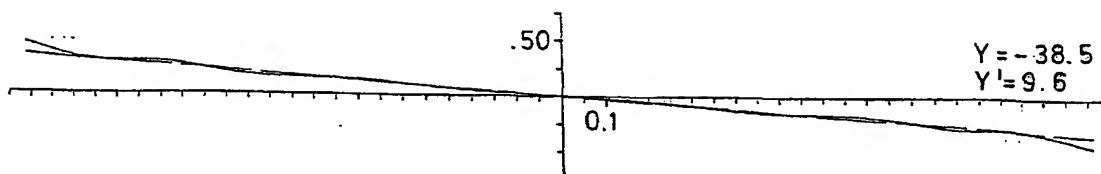


FIG. 6e

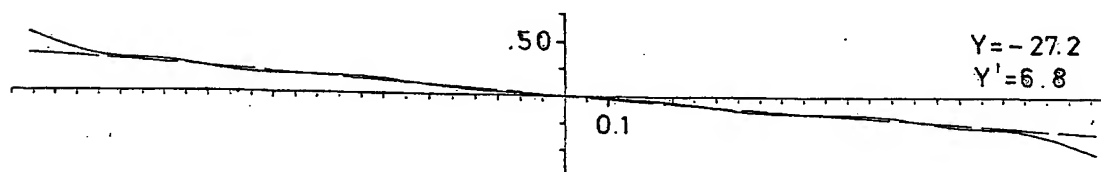


FIG. 6f

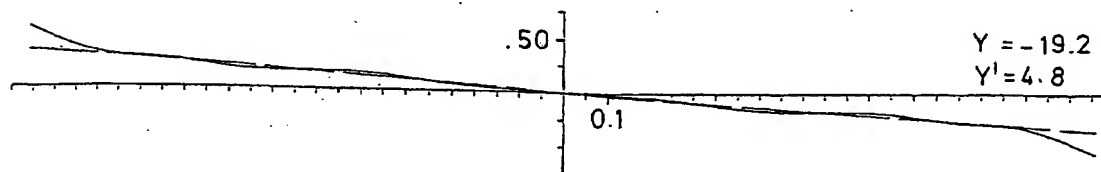


FIG. 6g

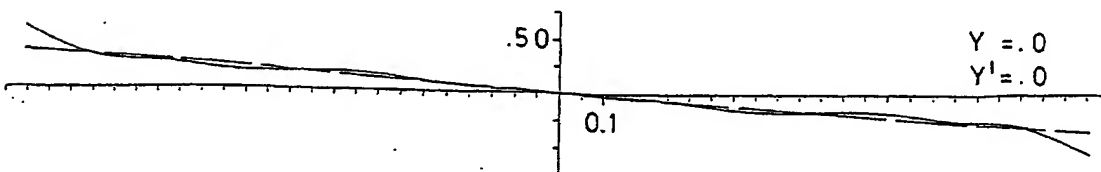


FIG. 7a

DYS ( $\mu$ )  
 $\uparrow$   
 $\rightarrow$  TAN DW'

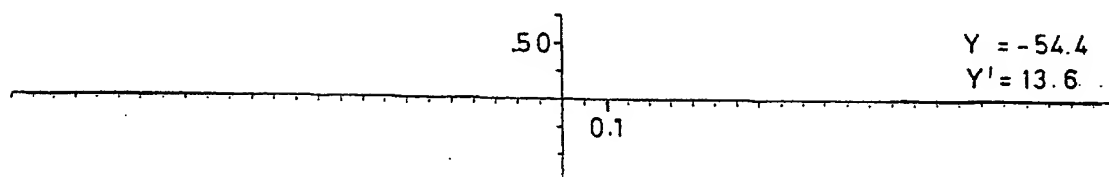


FIG. 7b

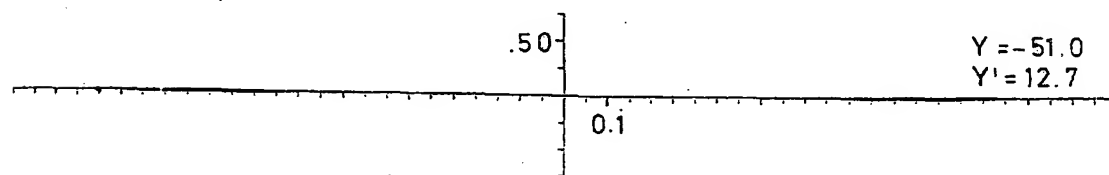


FIG. 7c

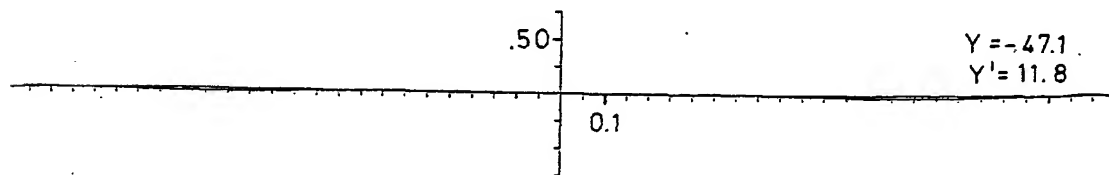


FIG. 7d

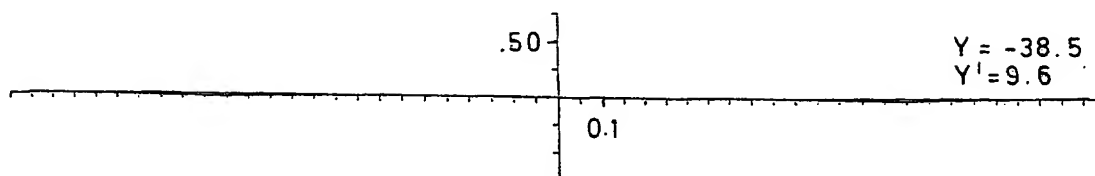


FIG. 7e

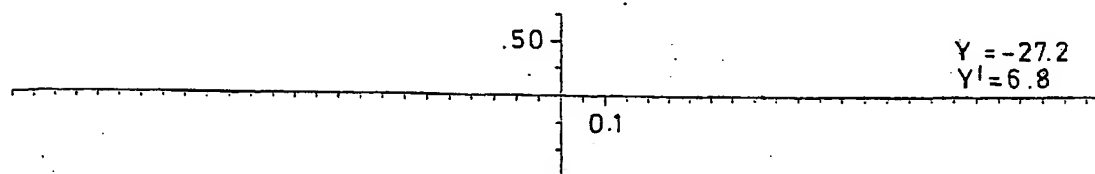


FIG. 7f

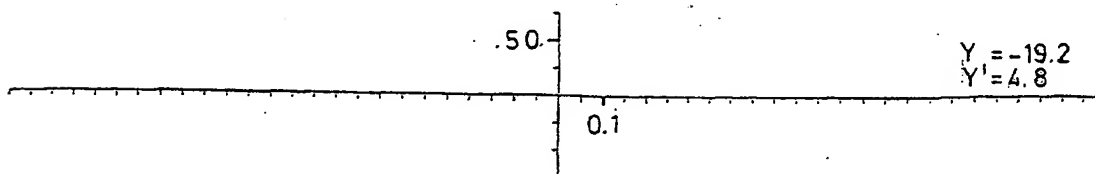


FIG. 8

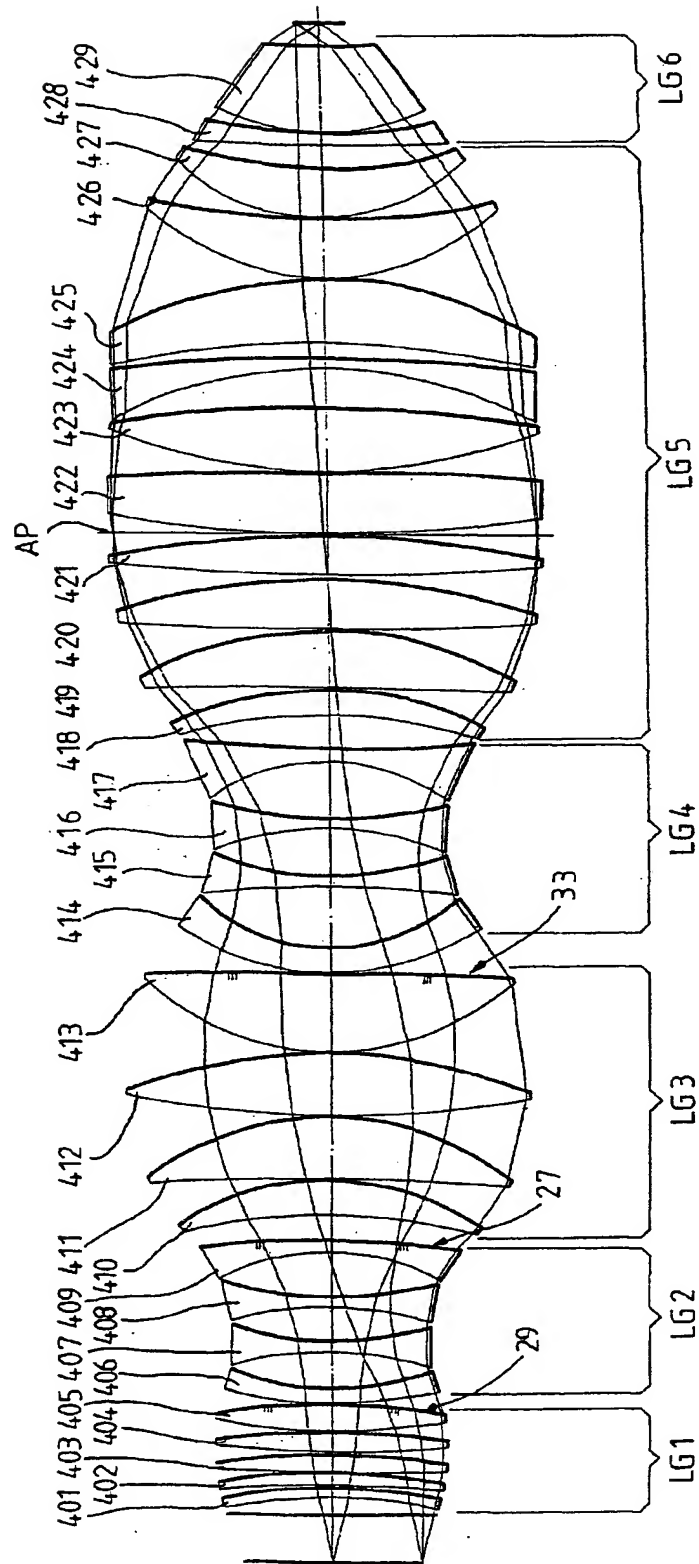


FIG. 9

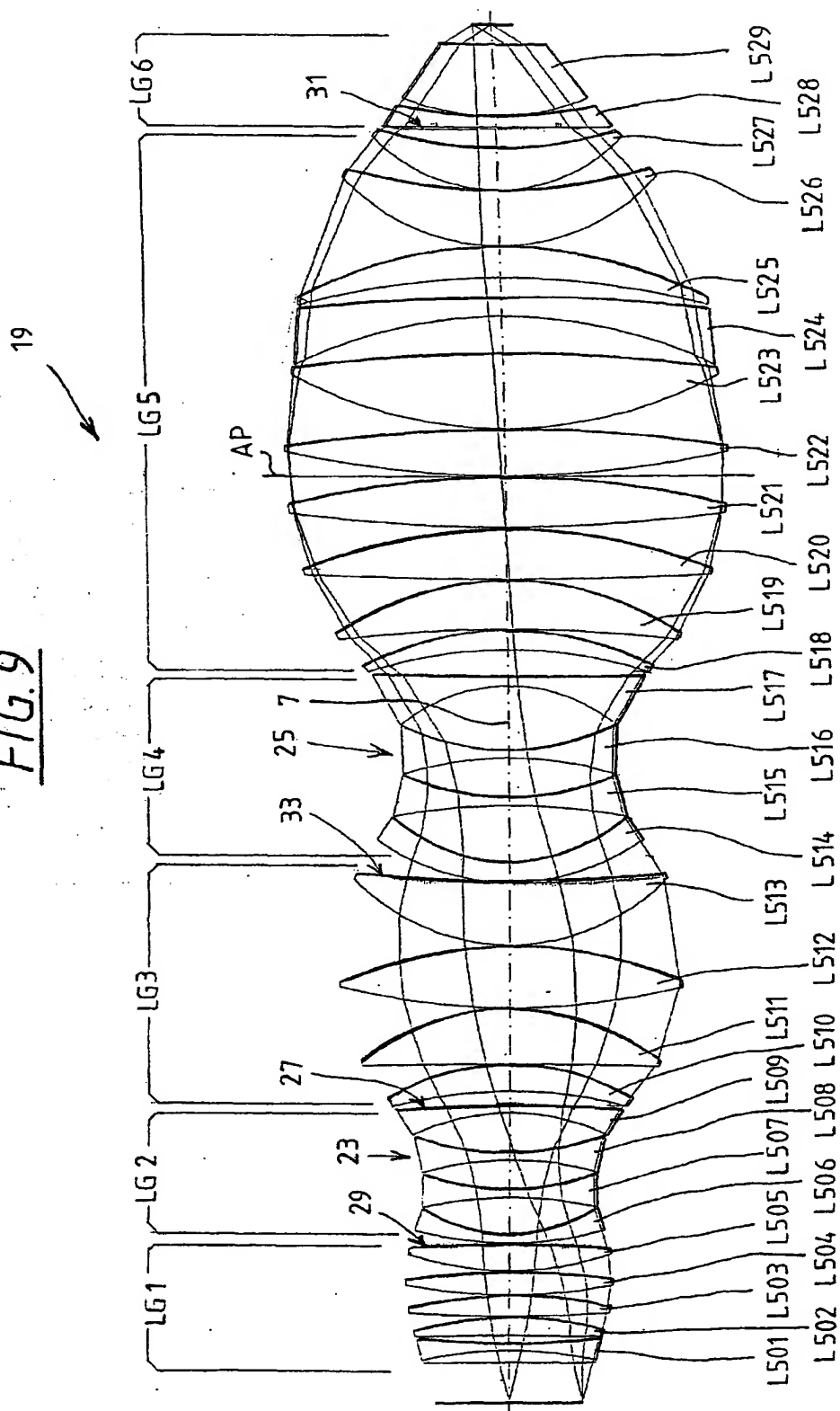


FIG. 10

